

WHAT IS CLAIMED IS:

1. A heat-resistant glass fiber which has a composition comprising, substantially by weight %, 56 to 58.5 % of SiO_2 , 12 to 17 % of Al_2O_3 , 16 to 27 % of CaO , 1 to 9 % of MgO , 0 to 1 % of Na_2O and 0 to 1 % of K_2O as the entirety of the fiber and containing neither B_2O_3 nor F_2 , and which has a surface layer portion made of a silicic glass having an SiO_2 content of at least 90 % by weight.

2. The heat-resistant glass fiber of claim 1, wherein the surface layer portion made of a silicic glass having an SiO_2 content of at least 90 % by weight has a thickness of 0.1 to 1.0 μm .

3. The heat-resistant glass fiber of claim 1, wherein a difference ΔT between a spinning temperature which is a melting temperature of a glass having a viscosity of 100 Pa's and a liquidus temperature is at least 30°C.

4. A process for the production of the heat-resistant glass fiber recited in claim 1, which comprises treating the surface of a glass fiber which has a composition comprising, by weight %, 56 to 58.5 % of SiO_2 , 12 to 17 % of Al_2O_3 , 16 to 27 % of CaO , 1 to 9 % of MgO , 0 to 1 % of Na_2O and 0 to 1 % of K_2O and containing neither B_2O_3 nor F_2 , with a mineral acid.

5. The process of claim 4, wherein the treatment is carried out by immersing the glass fiber in an aqueous solution containing, as the mineral acid, 1 to 10 % by weight of at least one acid selected from HCl , H_2SO_4 or HNO_3 at a temperature of 0 to 90°C.